

AMENDMENT UNDER 37 CFR § 1.111
Serial No. 10/736,756

AMENDMENTS TO THE ABSTRACT

Please amend the Abstract as follows:

~~A~~ In a method and an apparatus for coupling an optical waveguide to a light emitting diode (LED) or another light source to ~~within a resin case an optical waveguide structure via removing a section of a LED resin case to expose a surface closely proximal to a light emitting face of the semiconductor LED chip.~~ An input end of the optical waveguide is mounted proximal and substantially perpendicular to the surface a surface formed in the resin case parallel to a light-emitting face of the LED. The optical waveguide structure and the LED resin case are can be bonded by, ~~in one embodiment of the invention,~~ a light or thermally curable resin that is applied and further subsequently solidified. In a second embodiment of the invention The light or thermally curable resin may be, ~~a photopolymer,~~ sensitive to the light emerging from the waveguide, is used to bond the LED resin case and the optical waveguide structure. An automated coupling system is proposed provided to optimize the coupling conditions using the in-coupled light efficiency feedback and controller. Finally a method is described allowing the coupling efficiency to be controlled using external excitation forces or light intensity variations, thanks to ~~using the~~ electro-optic, magneto-optic, thermo-optic, light polarization sensitive or nonlinear properties of the filler material used between the light-emitting device resin case and waveguide.